

IDAHO PANHANDLE NATIONAL FORESTS

2450
Commercial Sales - Proposed

04-2420-01

STARS # 11303

FERN HARDY TIMBER SALE REPORT
AND
APPRAISAL

DISTRICT

SUPERVISOR'S OFFICE

Prepared _____
By

Date _____

Reviewed for Advertisement

By

Date

Reviewed _____
By

Date _____

Reviewed _____
By

Date _____

I hereby certify that this sale meets
the requirements of Secretary's
Regulation 36 CFR 223.30.

Staff Officer, Timber

Date

Fern Hardy Timber Sale Report

I. Location

This timber sale is located approximately 16 air miles east of Coeur d'Alene, Idaho. The timber sale area lies within T50N, R1W, Sections 28, 29, and 32-35; T49N, R1W, Sections 1-17 and 21; T49N, R1E, Sections 7, 8, 9, and 16-18; Boise Meridian. The timber sale area is 11,465 acres in size, and is located within Kootenai County, Idaho. The timber stand atlas compartment numbers are 348, 375 and 376, Coeur d'Alene River Ranger District, Idaho Panhandle National Forests. Harvest is planned on 638 acres. The sale area lies in the Coeur d'Alene River drainage.

Location to the sale from the Fernan Ranger District is east on I-90 to Fourth of July Pass east to FR 3097 near the Fourth of July Parking Area. This is the west side of the sale area. Continuing on FR 3097 for approximately 6.5 miles to Curran Saddle and east on FR 259 (Wall Ridge) approximately 5.5 miles to the north east side of the sale area. From Fourth of July Pass east on I-90 to the Rose Lake Junction (exit 34) head north over the overpass and then west on the Frontage Road that is north of the freeway, to FR 1601, this is the south end of the sale area. Additional road access to the sale are on FR 3093, FR 236, FR 1602, 1603 and 259H.

II. Relationship to the Environmental Document and Other Uses

This sale is prepared under the direction of the Decision Notice from the Fern Hardy Resource Area Healthy Forest Restoration Act Environmental Assessment approved by the Forest Supervisor on August 5, 2011. The purpose of this sale is to respond to the goals and objectives of the National Fire Plan and Kootenai County Fire mitigation plan with hazardous fuels reduction and stand improvement. One objective of this timber sale is to treat fuel loadings within and adjacent to the Wildland Urban Interface to reduce the risk of high-intensity wildfire. The other objective is to improve long-term forest health by promoting long lived early seral tree species and to maintain and improve dry site habitats and ecosystem components.

The Fern Hardy Decision Notice identified the proposed action alternative as the selected alternative. The proposed timber harvest of this alternative included 642 total acres of commercial harvest. Final unit layout resulted in a total of 638 total harvest acres. This includes an additional 3 acres associated with right-of-way clearing.

The Decision Notice identified 1.3 miles of new road construction and 0.7 miles of temporary road construction. This timber sale will implement this road work as designed.

A. Relationship to Private Land/Rights-of-Way: The sale area is located adjacent to the community that exists in the area North of I-90 just West of Cataldo. Cutting units 58A, 58C, 58, 59, 60, 62, and 64 are located adjacent to private property. Landlines are all in place and were updated during the summer of 2010 and 2011. There are currently no rights-of-way agreements needed to access this project area. There is a possibility that the purchaser can haul timber from the 1603 road down through private property if a right of way agreement is reached between the private land owner and the purchaser.

- B. Threatened, Endangered and Sensitive Species: Currently no threatened or endangered species have been known to inhabit or have been observed in the Fern Hardy Resource Area. The proposed treatment is not expected to adversely affect any T&E or sensitive plant or animal species per the biological assessment and evaluations. Some sensitive plants have been found in the resource area, but impacts were mitigated through sale layout.

For sensitive animal species, some activities may impact individuals or habitat, but these activities are not likely to trend toward a federal listing or a loss of viability. Snags will be retained to meet the Northern Region Snag Management Protocol. All roads closed to the public that are opened, constructed, or reconstructed for use of the timber sale will remain closed to the public during use and will be closed with the passage of each vehicle during the sale and then with a gate or barrier at the end of the timber sale. Temporary roads will be recontoured following harvesting activities.

Protection measures will be added to C6.24# of the timber sale contract in the event that any TES species is encountered during sale operations. Provision C6.24# will also require that the Forest Service be notified within 48 hours if evidence of threatened or endangered species usage is discovered in the sale area.

- C. Wetlands/Streamside Habitats: No-harvest streamside buffers were implemented along stream channels within the sale area per Inland Native Fish standards to meet Riparian Management Objectives. There are not any harvest units located within any Riparian Habitat Conservation Areas. Any discovered wetlands, seeps, bogs, elk wallows and springs less than one acre in size will be protected with a 100 foot no activity buffer. Site specific BMP's will be utilized.
- D. Special Uses, Mining Claims, Range Allotments: There are no active mining claims or range allotments within the timber sale area but there are unpatented mining claims in the area.

There is an Avista powerline adjacent to units 68, 69, and 70 and two pipelines (Yellowstone Pipeline- Petroleum, Northwest Pipeline – natural gas) lie adjacent to units 58A, 58C, and 70.

An outfitter and guide has a special use permit to provide guided ATV and snowmobile tours on roads 259 and 3010, 3097, and 3098.

- E. Noxious Weeds: All roads used for implementation of harvest activities will be treated for noxious weeds, both prior to and at the conclusion of hauling under provision C6.27# by the purchaser. The district's intent of pre-haul spraying is to spray for noxious weeds in advance of equipment moving in for logging operations. Similarly, the district's intent for spraying post hauling is to conduct noxious weed spraying after all logging operations are completed and equipment is moving out.

Purchaser will be required to wash off-road equipment prior to moving into the sale area in accordance with C6.351# of the timber sale contract. The timber sale contract will require that the purchaser seed and fertilize skid trails, landings, and obliterated temporary roads.

- F. Cultural Resources: No known cultural resource sites will be impacted by sale activities. Timber sale contract provision (B)C6.24# provides protection in the event that a new site is discovered.

- G. Soils: All harvest activities in ground-based units will occur when the soil profile is dry or frozen. To determine when the soil is dry, a test pit should be dug to 8 inch depth. The soil at the bottom of the pit should crumble in your hand. (If the soil is moist, it will clump together). Skid trails will be established at approximately 100-ft spacing unless on slash mats. In units 55 and 58C all equipment will need to operate on a slash mat. Mechanical felling is prohibited in units 11, 14, 15, 16, 26, 42, 43, 50, 50A, 52, 53, 56A, 60, 61, and 63. Grapple piling in unit 41 will occur only from designated skid trails. Unit 71 will require decompaction of skid trails to mitigate effects to soils.
- H. Other: No log haul or road maintenance activities are to occur on any roads or trails in the project area on weekends and holidays. This restriction will be in effect at 5:00 pm on the day prior to the weekend or holiday.

No felling or skidding operations permitted during the spring period of April 1 to June 15 to minimize damage to residual trees in units 3, 53, 55, 58C, 60, 62, 62A, 64, 65, and 73.

To protect the groomed snowmobile route, logging activities would not be allowed on forest roads 259, 3097, and 3098 between December 1st and March 31st unless otherwise agreed upon.

III. Timber Volumes

The timber sale was marked and cruised during the fall of 2010 and winter and spring of 2011. The cruise is #00002 and dated 7/19/2011. The sale was variable plot, fixed plot, and sample tree cruised. This sale is planned to be offered as a weight-scaled sale estimated to be over \$95,000 in appraised value. Forest Service standards require that the cruise be less than a 20% error for scaled sales in this value range. The sampling error for this sale is 7.88%. This timber sale was divided into 4 strata. Strata 1 was a variable plot cruise of all products. Strata 2 was a sample tree cruise of all products within the dry site units. Strata 3 was a sample tree cruise of all products within the units found on wet sites. Strata 4 was a fixed plot (1/20 acre) cruise of all products within thinning units 55 and 58C. Strata 5 was a 100% cruise of all products within the right of way (ROW) on new construction road 259G. Strata 6 was a cruise of all products in species designation (SD) units that were variable plot cruised. Each strata is under the 40% maximum error limit.

Non-sawlog roundwood material (topwood) is required removal in all units. Roundwood removal (small trees) will be required in all ground based units and in skyline units 12, 56 and 58A. For this sale, non-saw material will be required to be utilized to a 3" top with a 16' piece.

Existing dead trees that do not meet saw log merchantability standards are required remain standing unless needed to be felled for safety reasons. Snags felled for safety will be required to remain on site. To maintain habitat for snag-dependent species, no additional dead trees may be marked for removal in Unit 47 regardless of merchantability.

The Fern Hardy Timber Sale was cruised utilizing Forest Service personnel. Cruising was completed during the 2010, 2011 field season. All Forest Service Cruise assistants were under the direct supervision of Certified Cruisers. Cruise design and implementation procedures were adhered to the standards prescribed in the Forest Cruising Handbook 2409.12 and all Region 1 and IPNF Supplements.

District Certified Cruisers: Davis, Frigard, Welbourn, Little, Schaffer.

District Assistant Cruisers: Tom Elliott.

This sale was cruised to an error of 7.95. Maximum allowable for weight scaled sales is 20%. The cruise identification number is 00002.

I certify that this sale was cruised by competent cruisers as determined by adequate testing. In my opinion, the cruise estimates of the volume to be cut are within acceptable limits (FSH 2409.12) as required for Scaled sales.

By: **Daniel E. Frigard** /s/ Date: 07/19/2011
Title: Zone Check Cruiser

Area Determination: GPS was used for all units in the sale.

GPS: Trimble Trimble GeoXT.

Standards: PDOP 6, SNR: 6 (Factory Recommendation), Elev Mask: 15. All files were differentially corrected as required within FSH 2409.12 Timber Cruising Handbook 52.21 – Global Positioning System Traverse Standards.

The following table summarizes sale acreage, and estimated timber volumes by species, and logging system by unit.

Volumes are in CCF

Unit	Acres	Type	C	DF	GF	H	L	LP	PP	WP	Sawlog	Non-Saw	Total	Logging System
2	25	LTM	0	317	115	2	1	1	17	1	454	16	470	Skyline
2A	5	LTM	0	129	9	0	1	0	3	2	145	5	150	Ground
2B	10	CTM	0	107	20	0	1	0	1	3	131	4	135	Ground
3	23	CTM	0	271	91	0	0	27	0	0	389	14	403	Ground
11	18	SD	21	250	265	5	0	22	0	9	573	23	596	Skyline
12	8	LTM	8	134	132	11	43	0	2	2	332	20	352	Skyline
13	11	SD	13	153	162	3	0	13	0	6	350	14	364	Ground
14	9	LTM	0	51	268	0	17	0	0	2	339	8	347	Skyline
14A	9	LTM	0	63	282	0	31	0	0	1	376	12	388	Ground
15	26	LTM	7	269	373	3	46	9	0	11	718	22	740	Skyline
16	34	CTM	0	55	181	0	10	0	0	1	248	8	256	Skyline
16A	10	LTM	0	215	300	0	3	0	0	0	519	19	538	Ground
22	15	LTM	14	252	247	21	81	0	4	4	622	38	660	Skyline
22T	9	LTM	9	151	148	13	49	0	2	2	373	23	396	Ground
24	17	LTM	16	285	280	24	91	0	4	4	706	43	749	Skyline
25	36	LTM	34	604	593	51	194	0	10	9	1494	92	1586	Skyline
26	8	LTM	8	134	132	11	43	0	2	2	332	20	352	Skyline
35	10	LTM	20	84	338	18	2	1	0	4	466	22	488	Escaliner
36	10	LTM	12	90	249	30	10	28	0	14	432	20	452	Ground
41	6	LTM	11	35	82	2	0	0	0	2	132	7	139	Ground
41A	6	CTM	10	4	54	19	0	0	0	1	88	5	93	Escaliner
42	5	LTM	6	9	85	11	0	0	0	0	111	6	117	Skyline
43	18	SD	58	96	385	33	5	1	0	0	579	25	604	Skyline
46	21	SD	24	292	310	6	0	26	0	11	668	26	694	Skyline
47	3	CTM	0	44	0	0	0	0	0	0	44	2	46	Skyline
49	16	LTM	15	268	264	23	86	0	4	4	664	41	705	Ground
50	6	LTM	0	135	4	0	0	0	0	0	139	6	145	Skyline

50A	9	LTM	0	150	8	0	16	0	0	0	174	9	183	Skyline
52	12	CTM	0	128	4	0	1	0	0	0	132	6	138	Skyline
52A	4	CTM	0	57	43	1	0	0	0	0	101	4	105	Escaliner
53	9	CTM	2	27	20	22	36	0	0	0	106	5	111	Skyline
Unit	Acres	Type	C	DF	GF	H	L	LP	PP	WP	Sawlog	Non-Saw	Total	Logging System
55	31	LTM	158	49	315	72	0	5	0	0	598	144	742	Ground
56	9	LTM	36	120	201	29	2	0	0	2	390	22	412	Skyline
56A	7	LTM	16	51	148	23	12	0	0	7	257	10	267	Skyline
57	7	LTM	87	13	92	25	6	1	0	8	232	12	244	Skyline
58	8	LTM	32	18	163	38	5	1	0	16	273	10	283	Skyline
58A	4	LTM	20	0	52	35	1	0	0	0	108	7	115	Skyline
58B	4	LTM	12	14	69	41	7	34	0	2	180	9	189	Ground
58C	11	LTM	56	17	112	25	0	2	0	0	212	51	263	Ground
59	14	LTM	13	235	231	20	75	0	4	4	581	36	617	Skyline
60	4	CTM	0	45	0	0	0	0	0	0	45	3	48	Skyline
61	7	LTM	0	71	53	0	1	0	0	3	128	4	132	Skyline
62	13	CTM	0	117	6	0	0	0	0	0	124	5	129	Skyline
62A	7	CTM	0	47	8	0	0	0	0	0	55	2	57	Ground
63	12	LTM	11	201	198	17	64	0	3	3	498	31	529	Skyline
64	4	CTM	0	59	10	0	1	1	0	0	71	3	74	Skyline
65	7	CTM	0	103	17	0	0	0	1	0	121	6	127	Skyline
68	6	LTM	3	20	154	3	1	29	0	9	219	8	227	Ground
69	4	SD	58	11	100	7	0	0	0	0	176	8	184	Ground
70	4	LTM	17	3	108	8	1	3	0	3	144	4	148	Ground
71	34	SD	40	472	501	9	0	42	0	18	1082	43	1125	Ground
73	22	CTM	0	169	35	0	0	0	0	1	205	9	214	Skyline
74	8	LTM	8	134	132	11	43	0	2	2	332	20	352	Ground
ROW	3	-	0	98	23	0	3	0	44	3	171	5	176	Ground
Total	638	-	855	6928	8170	671	989	245	104	177	18139	1017	19156	-
MBF	-	-	413	3770	4672	352	510	133	57	100	10006	332	10338	-
Tons	-	-	1972	22165	25260	2267	3194	734	346	534	56472	2969	59441	-

This sale will be offered on a weight scale basis. The following sawlog weight factors were used for this sale in lbs/cubic foot. DF-60, L-62, GF-58, LP-55, H-61, WP-55, PP-67, and C-43. This resulted in a conversion factor of 3.12 tons per ccf for sawtimber and 2.93 tons per ccf for roundwood.

IV. Marking Plan

This sale contains 54 harvest units. Units 2B, 3, 16, 41A, 47, 52, 52A, 53, 60, 62, 62A, 64, 65, and 73 are individual cut tree marked (CTM). Cut trees are designated with a **BLUE** horizontal bole mark on the uphill and downhill side and a **BLUE** horizontal stump mark.

Units 2, 2A, 12, 14, 14A, 15, 16A, 22, 22T, 24, 25, 26, 35, 36, 41, 42, 49, 50, 50A, 55, 56, 56A, 57, 58, 58A, 58B, 58C, 59, 61, 63, 68, 70, and 74 are individual leave tree marked (LTM). Leave trees are designated with an **ORANGE** horizontal bole stripe on the uphill and downhill side and an **ORANGE** horizontal stump mark.

Units 11, 13, 43, 46, 69, and 71 are species designation units (SD). In all the SD units PP are designated for leave. In unit 69 all WL and PP were designated for leave. In many of these units additional leave trees have been marked for leave. These leave trees are marked with an **ORANGE** horizontal bole stripe on the uphill and downhill side and an **ORANGE** horizontal stump mark.

Standard Unit Boundaries all Units: Three vertical stripes of **ORANGE** paint approximately 3' in length with the mid-point of each vertical stripe to be roughly at "eye-height". The center vertical stripe faces into the area to be treated. Boundary trees have an **ORANGE** horizontal stump mark located on the downhill side. Many of the unit boundaries fall on system roads and the boundary of these units is the roadway.

Purchaser will be required to protect Superior Plus Western White Pine trees in all units. These trees are marked with an **ORANGE** horizontal bole stripe on the uphill and downhill side and an **ORANGE** horizontal stump mark and/or a white pine plus tree tag. Purchaser will be charged \$5,000.00 for each of these trees that are cut down or damaged.

V. Logging Plan

This sale will require tractor (35%, 221 acres), skyline (62%, 397 acres) and escaliner (3%, 20 acres) yarding systems. The right-of-way clearing is included in the tractor yarding volume. All of these skidding distances are approximate. The average skyline yarding distance is 650 feet with a maximum reach of 1100 feet. The average escaliner yarding distance is 500 feet with a maximum reach of 700 feet. The average tractor yarding distance is 350 feet with a maximum skid of 800 feet.

Mechanized felling will be permitted in skyline and cable units provided slopes are less than 45% unless otherwise prohibited. Felling equipment will not be permitted to pivot on slopes over 25%; therefore purchaser should plan on backing out skyline or escaliner corridors and not pivoting at the bottom of the units. Skyline unit 53 is designated for yarding with limbs and tops attached. Units 22, 41A, 55 and 58C are designated for whole tree yarding. Mechanical felling is prohibited in units 11, 14, 15, 16, 26, 42, 43, 50, 50A, 52, 53, 56A, 60, 61 and 63.

Conventional ground-based skid trails will be required to be a minimum of 100 feet apart, unless otherwise agreed. Ground disturbance associated with skid trails will need to be waterbarred and seeded and fertilized in accordance with C6.601# of the timber sale contract. All scheduling of harvest activities in tractor units will occur when the soil profile is dry or frozen. During winter logging activities ground-based equipment may operate on a 24-inch snow layer or 18 inches of settled snow, when the ground is frozen to a minimum depth of 3 inches for small equipment and 6 inches for larger equipment, or restrict equipment operation to main skid trails or where adequate slash matting exists.

Purchaser should utilize roads and turnouts as much as possible for landings in order to maintain existing and proposed soil compaction levels. All landings constructed off the existing road prism and approved under B6.422 are required to be piled. These landings require decompacting, seeding and fertilizing, and scattering of slash at conclusion of use. All landings free of slash piles will be decompacted.

Most logging units use conventional logging systems, but there are some anomalies that are described below. The following is a list of unit specific logging systems and slash requirements.

- Unit 2B is a favorable ground based yarding but an incidental number of trees will need to be yarded up to the upper road rather than skidded down to the lower road. This may require pulling 150' of cable line.
- Unit 3 will require the use of a designated skid trail on the northern boundary of the unit that will become the fireline. Unit 3 will require some directional falling to high bank a strip of trees within the steeper portion of the unit above FR #259.
- Unit 12 includes a sensitive plant that is protected by an internal boundary. Trees will need to be directionally felled away from the exclusion area and trees may not be pulled through the exclusion area. Hand line is required to be built on a portion of this unit
- Unit 13 will require hand falling and directional felling of trees in the steeper area above FR 1603 on the SW end of the unit. The use of old excavated skid trail will be required. This skid trail will be required to be recontoured at the end of use. A designated skid trail will also need to be created and eventually used for fireline in this unit.
- Unit 14 may require the use of a tieback tree in unit 14A on the longest edge to keep the leading end of logs off of the ground. Handline is required in Unit 14.
- Unit 15 may require an intermediate support along the southern edge of the unit to avoid yarding through a plantation to the south.
- Unit 16 may require a tractor swing for a portion of the middle of the unit.
- Unit 24 will require intermediate supports and a jumpdown landing. A small piece of this unit above FR #3097 will need to be high banked down to the road.
- Unit 25 will need either jumpdown landing or tractor swing along the ridge on the east side of the unit. Pieces of the unit should be directionally felled down to FR #236 and 236G.
- Unit 35 is designed as an escaliner/tractor swing from the unit to the temporary road or through the saddle in unit 71.
- In Unit 41 grapple piling must occur from designated skid trails only. Portions of unit 41A will require directional felling of timber and the use of an escaliner off the old road within the unit to remove the material.
- In Unit 46 the area above the new road construction (236C) will require directionally falling down to the new road.
- In Unit 49 high banking and directional falling is required in the western portion of the unit down to FR #3097.

- Unit 52A is designed as an escaliner/tractor swing.
- All equipment used in unit 55 and 58C must travel on a slash mat.
- In Unit 55 there is a small portion of the unit that is too steep (>35%) for ground-based equipment and will need to be directionally felled down to the old road on the lower end of the unit.
- Unit 56 will require a tractor/skyline swing or a small jumpdown landing on the ridge that lies on the east side of the unit to harvest the lower portion of the east side of the unit.
- In units 58, 59, and 62 private fences will need to be protected and directional felling must occur away from fences. The fences will be protected under B6.22, Protection of Improvements.
- In units 68, 69, and 70 trees must be directionally felled away from the powerline. The powerline and pipeline will be protected under B6.22, Protection of Improvements.
- In units 58A, 58C and 70 there will be no skidding allowed within the pipeline right-of-way corridor that lies adjacent to these units.
- In unit 68 there is an amphibian pond and trees must be directionally felled away from the pond. Trees may not be skidded through the leave area around the pond, and the road may not be graded where it nears the pond. Any incidental trees felled into the pond may not be removed.
- Trees in unit 71 will need to be directionally felled away from the cedar leave area in the northern end of the unit and skidding within this area is prohibited.
- In unit 74 high banking and directional felling will need to occur along the west end of unit 74 down to FR #259G.

VI. Transportation System

Approximately 1.3 miles of specified road (4 road segments) will need to be constructed to access units 46 (236C Seg 2); units 2A, 2B, 64, and 65, (259G Seg2); units 47 and 73 (1602 Seg2); units 60, 61, 62 and 62A (1603UB Seg 1).

Specified Road Construction:

Road Number	Road Name	Type of Work	Road Mileage
236C Seg 2	Mason Creek Spur C	New Construction	0.25
259G Seg 2	Wall Ridge Spur G	New Construction	0.50
1602 Seg 2	Upper Fern	New Construction	0.29
1603 UB Seg 1	Rantenan Spur UB	New Construction	0.28

Right-of-way clearing slash for the new system road construction will be placed in a slash windrow below the fillslope. Purchaser will be required to retain healthy western larch, cedar, ponderosa pine and white pine with a stump diameter of 18 inches or larger within the clearing for the slash windrow.

Purchaser will be required to provide breaks in the windrow on ridgelines and every 200 feet along the roadway.

Approximately 39 miles of specified road reconstruction will be needed that may consist of any of the following; brushing and blading, removal of vegetative matter from the roadbed area, installation of rolling dips, re-establishing the roadway template and other incidental work.

Approximately 0.7 of a mile of temporary road (3 road segments) will also need to be constructed. After use, the purchaser will be required seed, fertilize, and mulch the segments of the recontoured temporary road.

The center line for the temporary roads have been flagged with pink flagging. The temporary roads will need to be re-contoured after use in accordance with provision C5.102# and seeded under provision C6.601#.

This sale has a split haul configuration. Most volume will haul out of FR 3097 and FR 3093 to 4th of July Pass. The remainder will haul out the 1601 road to the frontage road near the Rose Lake exit. All of these haul routes collect on Interstate 90 and are appraised to the mill site at Chilco, ID. Use of the 259 road east of units 2 and 3 and onto the county road is prohibited.

The purchaser will be required to maintain all forest roads utilized under this contract including T-103 dust abatement, as needed. Chemical dust treatments are not permitted on the 3093 and 266 road (and their laterals) under this contract.

Roads 3093UG and 259UJ will need to be opened and used with the sale and then recontoured after use. These roads are 0.51 and 0.30 miles long respectively for a total of 0.81 miles of road recontouring. The running surface of these roads must be seeded, fertilized and decompacted to a depth of 18”.

The purchaser will be required to install a new gate on FR #236 at the junction of FR #3097 at Curran Saddle and install a new gate on the #3098 road at its junction with #3097 at Mason Saddle under the specified road package. All gates will be required to be closed with passage of each vehicle. (C5.413)

All roads designed to be used with this project will be required to be sprayed for noxious weeds prior to activities and after completion of purchaser activities under provision C6.27#. Purchaser will also be required to wash off-road equipment prior to moving into the sale area under provision C6.351#.

VII. Erosion Control

Purchaser will be required to seed and fertilize areas of ground disturbance associated with skid trails, landings, the temporary road, and the new road construction at conclusion of use.

Application shall be during the period March 1 to June 15 and September 1 to November 15. Seed shall be applied evenly at the rate of 15.0 lbs per acre for landings, temporary roads and skid trails.

General seed mix: for use in disturbed areas associated with landings and the new system roads such as temporary roads and skid trails.

Seed quantity

Species	cost/lb	lbs/ac	cost/ac
Slender wheatgrass <i>Elymus trachycaulus</i> "Revenue" or "Pryor"		4	
Mountain brome <i>Bromus marginatus</i> "Bromar"		4	
Blue Wildrye <i>Elymus glaucus</i> "Arlington" or "Elkton"		4	
Tufted hairgrass <i>Deschampsia caespitosa</i> "Nortran"		0.5	
Quickguard Sterile Triticale <i>Triticum aestivum x Secale cereal</i>		2	
Silky Lupine <i>Lupinus sericeus</i> *		0.5	
Blend fee (per lb @15 lbs)	\$0.05		
TOTAL	\$6.79	15.0	\$101.85**

*acceptable substitution is Mountain lupine *lupinus argenteus* spp. *Rubicaulis* for Silky lupine *Lupinus sericeus*

**Quote from Rainer Seed, Davenport, WA, 7/7/11

Acres to seed: 31 acres x \$101.85/ac = \$3,157.35

Labor for Seeding: 33 hours @ \$26.48/hr = \$873.84

Seed and Labor cost: = \$4,031.19

Seed shall be applied by the Dry method. Fertilizer shall be applied at a rate of 200 pounds per acre in one application by the Dry method and have a chemical analysis as listed below:

<u>Nutrient</u>	<u>Percent</u>
Nitrogen, N	16
Phosphorous, P2O5	16
Potassium, K	16

Fertilizer cost = \$1,000 per ton (quote from Cenex, Dalton Gardens, ID 7/2011)

200 lbs per acre x 31 acre = 6200 lbs.

6200 lbs = 3.1 tons x \$1000/ton = \$3100.00

Labor for fertilizing: 33 hrs @ \$26.48/hour = \$873.84

Total fertilizer and labor cost = \$3973.84

Total cost for seeding and fertilizing = \$8005.03

Erosion Control – Cost/CCF: \$8005.03/18139 CCF = \$0.44/CCF

VIII. Sale Area Improvement - Reforestation

The KV plan will need to finance the essential reforestation which is made up of 495 acres of pretreatment exams for reforestation and 495 acres of tree planting, both full and partial planting, stocking surveys, plantation survival surveys, pre-site preparation slashing, and animal damage control.

IX. Hazard Reduction

The sequence of activities and activity costs are attached. Activities were input into FACTS for cost calculations.

Purchaser requirements:

Purchaser will be required to limb and top in the woods in all units except 22, 41A, 53, 55, and 58C.

Purchaser will be required to whole tree yard Units 22, 41A, 55, and 58C.

Purchaser will be required to top attach yard Unit 53.

Purchaser will be required to slash (cut down submerchantable regeneration) over 6' in units 56, 68, and 70.

Purchaser will be required to complete Leave Tree Protection on all live Western White Pine in Units 11, 12, 14, 15, 24, 36, 49, 58, 61, and portions of units 59 and 71.

Purchaser will be required to grapple pile Units 14A, 22T, 41, 55, 58B, 58C, 68, and 70 and portions of 35, 59, and 71. Piling should not occur near any Western White Pine. Logging slash will be required to overwinter prior to piling, unless it is determined by the FMO that leaving the slash to overwinter constitutes an unacceptable fire hazard. Purchaser will be required to cover piles as specified in C6.7#.

Purchaser will be required to grapple pile the slash windrow along the new road construction at completion of harvest activities. No piling should be done within 50 feet of draw crossings. Purchaser should pile the material on the top of the fillslope to provide as much clearance as possible from leave trees. The edge of the roadway can be used for piling but there needs to be enough room to allow a vehicle to drive past.

Purchaser will be required to construct hand fireline on portions of Units 2, 11, 12, 14, 15, 16, 16A, 22, 24, 25, 26, 35, 36, 42, 43, 47, 49, 52, 52A, 56, 56A, 57, 58, 58A, 59, 61, 62, 64, 69, 73, and 74 as shown on the Sale Area, Hazard Reduction, and Site Preparation Map. As much as possible, fireline should encompass the logging slash created by harvest operations, including slash which lands outside of the designated unit boundaries.

Skid trails will be designated on Units 3 and 13 to serve as firelines. Logging slash should not be placed on these skid trails. These skid trails are shown on the Sale Area, Hazard Reduction, and Site Preparation Map and are marked with "DST".

Purchaser will pile slash at landings for all units.

Forest Service BD requirements:

Forest Service will burn all landing piles and grapple piles. Forest Service will retain one unburned grapple pile every 5 acres for wildlife habitat.

Forest Service will underburn units 2, 2A, 2B, 3, 11, 12, 13, 14, 15, 16, 16A, 22, 24, 25, 26, part of 35, 36, 42, 43, 46, 47, 49, 50, 50A, 52, 52A, 53, 56, 56A, 57, 58, 58A, part of 59, 60, 61, 62, 62A, 63, 64, 65, 69, part of 71, 73, and 74

B. Purchaser Fire Liability:

1. Personnel and Equipment

Number Required	Item	Personnel
1	Tractor	1
1	Landing	1
1	Sawyer	3
1	Line machine	3
4	Truck drivers	4
1	Loader	1

2. Cost Calculations

Total number of personnel	13
Number of hours per day	12
Total hours per crew day	156
Hourly rate for AD-C firefighter	\$17.40
Average daily cost	\$2,714.40
Average fire length	5 days
Purchaser obligation for operation fire	\$13,572.00
Rounded up to nearest \$100	\$14,000.00

X. Other Provisions

A. Period of contract:

1. Normal operating season: June 1 thru October 31
2. Termination date: December 31, 2016
3. Road Completion Date: September 30, 2013

B. Other unique requirements:

1. All roads used for harvest activities will be treated for noxious weeds both prior to and after hauling (C6.27#) The district's intent of pre-haul spraying is to spray for noxious weeds in advance of equipment moving in for logging operations. Similarly, the district's intent for spraying post hauling is to conduct noxious weed spraying after all logging operations are completed and equipment is moving out.
2. All off-road equipment shall be cleaned prior to entering or reentering into the sale area (C6.351#).

3. Purchaser will need to coordinate operations with operations occurring with the Mason Thin timber sale in regards to roads 3093 and 236 and their laterals.
4. No log haul or road maintenance operations on weekends and holidays. This restriction will be in effect at 5:00 pm on the day prior to the weekend or holiday.
5. No logging operations or road maintenance operations will be allowed on groomed snowmobile routes 259, 3097, and 3098 from December 1st – March 31st.
6. Harvest slash will be required to over winter before hazard reduction activities take place (C6.7#).
7. Ground based yarding, processing and harvesting equipment will operate on slopes generally under 35 percent and utilize existing skidtrails and/or run on slash mats where possible.
8. Post harvest, all utilized skid trails will be either covered with slash and/or have logs randomly placed on the contour to reduce runoff, or stabilized with water bars and will be seeded and fertilized.
9. All harvesting in tractor units would occur when the soil profile is dry or frozen (C6.316#).
10. During winter logging activities, tractors may operate on a 24-inch snow layer or 18 inches of settled snow, when the ground is frozen to a minimum depth of 3 inches for small equipment and 6 inches for larger equipment, or restrict equipment operation to main skid trails or where adequate slash matting exists.
11. Temporary roads will be decompacted and recontoured following harvest activities.
12. No winter logging (December 1 through March 31), may occur in adjacent subdivisions simultaneously.
13. All roads closed with a gate or barrier must be closed with the passage of each vehicle (C 5.41#).
14. Decompaction of skid trails must occur in Unit 71.

C. Performance bond: Minimum performance bond will be set to cover approximately 50 percent of the slash treatment, erosion control, and road maintenance purchaser costs. This will equal \$80,000.